

CLAIMS

The following is a copy of Applicant's claims that identifies language being added with underlining ("____") and language being deleted with strikethrough ("____"), as is applicable:

1. (Currently Amended) A method of producing a structure, comprising the steps of:
 - providing an alginate-based powder;
 - providing at least one binder;
 - dispensing the alginate-based powder and the binder onto a build platform to form a layer of an alginate-based material, wherein the binder is dispensed with an ink jet printhead; and
 - forming a flexible three-dimensional object from the alginate-based material on the build platform, wherein the alginate-based powder is from about 50% to 90% by weight of the alginate-based material and the binder is from about 10% to 50% by weight of the alginate-based material.
2. (Currently Amended) The method of claim 1, wherein the alginate-based powder includes at least one alginate compound, ~~and at least one component selected from~~ at least one filler, and at least one multivalent cation.
3. (Original) The method of claim 2, further comprising:
 - dispensing the alginate-based powder and the binder onto the build platform independently, wherein the alginate-based powder and the binder on the build platform are commingled to form the layer of the alginate-based material.
4. (Original) The method of claim 2, wherein dispensing includes:
 - dispensing a layer of the alginate-based powder; and
 - dispensing a layer of the binder onto the layer of the alginate based powder thereby forming the layer of the alginate-based material.

5. (Original) The method of claim 2, wherein dispensing the alginate based powder and the binder is performed sequentially.
6. (Original) The method of claim 2, wherein the binder includes a water retaining additive.
7. (Original) The method of claim 2, wherein the alginate compound is selected from alginic acid and derivatives thereof, sodium alginate and derivatives thereof, potassium alginate and derivatives thereof, magnesium alginate and derivatives thereof, calcium alginate and derivatives thereof, and combinations thereof.
8. (Original) The method of claim 1, wherein the binder is an alginate swelling agent.
9. (Original) The method of claim 2, wherein the alginate-based powder includes components selected from a retardant, a wetting agent, a viscosity modifier, a surface tension modifier, a colorant, water retaining additives, fibers, and combinations thereof.
10. (Currently Amended) The method of claim 4 2, wherein the binder includes components selected from a retardant, a wetting agent, a viscosity modifier, a surface tension modifier, fibers, a colorant, water retaining additives, and combinations thereof.
11. (Canceled)
12. (Currently Amended) The method of claim 2, wherein the alginate compound is from about 40 50% to 95 90% by weight of the alginate-based powder, the filler is from about 5 to 90 50% by weight of the alginate-based powder, and the multivalent cation is from about 0.01 0.5% to 50 30% by weight of the alginate-based powder.

13-20.(Canceled)

21. (Newly Added) The method of claim 2, wherein the alginate compound is selected from alginic acid and derivatives thereof, potassium alginate and derivatives thereof, magnesium alginate and derivatives thereof, calcium alginate and derivatives thereof, and combinations thereof.

22. (Newly Added) The method of claim 2, wherein the multivalent cation is selected from: barium oxide, calcium oxide, magnesium oxide, and zinc oxide.

23. (Newly Added) The method of claim 2, wherein the multivalent cation is selected from: aluminum chloride, aluminum stearate, aluminum sulphate, aluminum acetate, aluminum nitrate, calcium carbonate, calcium ascorbate, calcium stearate, calcium lactate, calcium saccharate, calcium hydrogen phosphate, calcium chloride, calcium hydroxide, calcium acetate, hydroxyapatite, calcium nitrate, calcium fluoroborate, zinc chloride, zinc stearate, zinc acetate, zinc gluconate, zinc sulphate, zinc nitrate, barium nitrate, strontium nitrate, magnesium sulfate, magnesium nitrate, iron chloride, iron nitrate, iron sulphate, and the hydroxides of magnesium, calcium, barium, aluminum, boron, zirconium, hafnium, titanium, chromium, vanadium.

24. (Newly Added) The method of claim 2, wherein the alginate compound is selected from: mannuroic acid, polymer of mannuroic acid, guluronic acid, polymer of guluronic acid, and co-polymers of mannuroic acid and guluronic acid.

25. (Newly Added) The method of claim 2, wherein the filler is selected from: aluminum hydroxide, kaolin, talc, wollastonite, feldspar, mica, starch, starch derivatives, polycarbonates, polyepoxides, polyethylene, polyacrylates and polymethacrylates.

26. (Newly Added) The method of claim 2, wherein the binder includes a viscosity modifier that is selected from: ethylene glycol diacetate, potassium aluminum sulphate, isopropanol, ethylene glycol monobutyl ether, diethylene monobutyl ether, glycerine triacetate, ethyl acetoacetate, polyvinyl pyrrolidone, polyethylene glycol, polyacrylic acid, sodium polyacrylate, and combinations thereof.

27. (Newly Added) The method of claim 2, wherein the alginate-based powder includes fibers that are selected from: polymer fibers, ceramic fibers, carbon fibers, glass fibers, aramide fibers, silicon carbide fibers, aluminum silicate fibers, and combinations thereof.